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CASES *from the Author*

OF

ENCYSTED TUMOURS

CONNECTED WITH

THE LIVER,

AND OF

AQUEOUS ENCYSTED TUMOUR

OF

THE KIDNEY,

WITH A SUPERNUMERARY GLAND ATTACHED TO IT.

BY CÆSAR HAWKINS, ESQ.

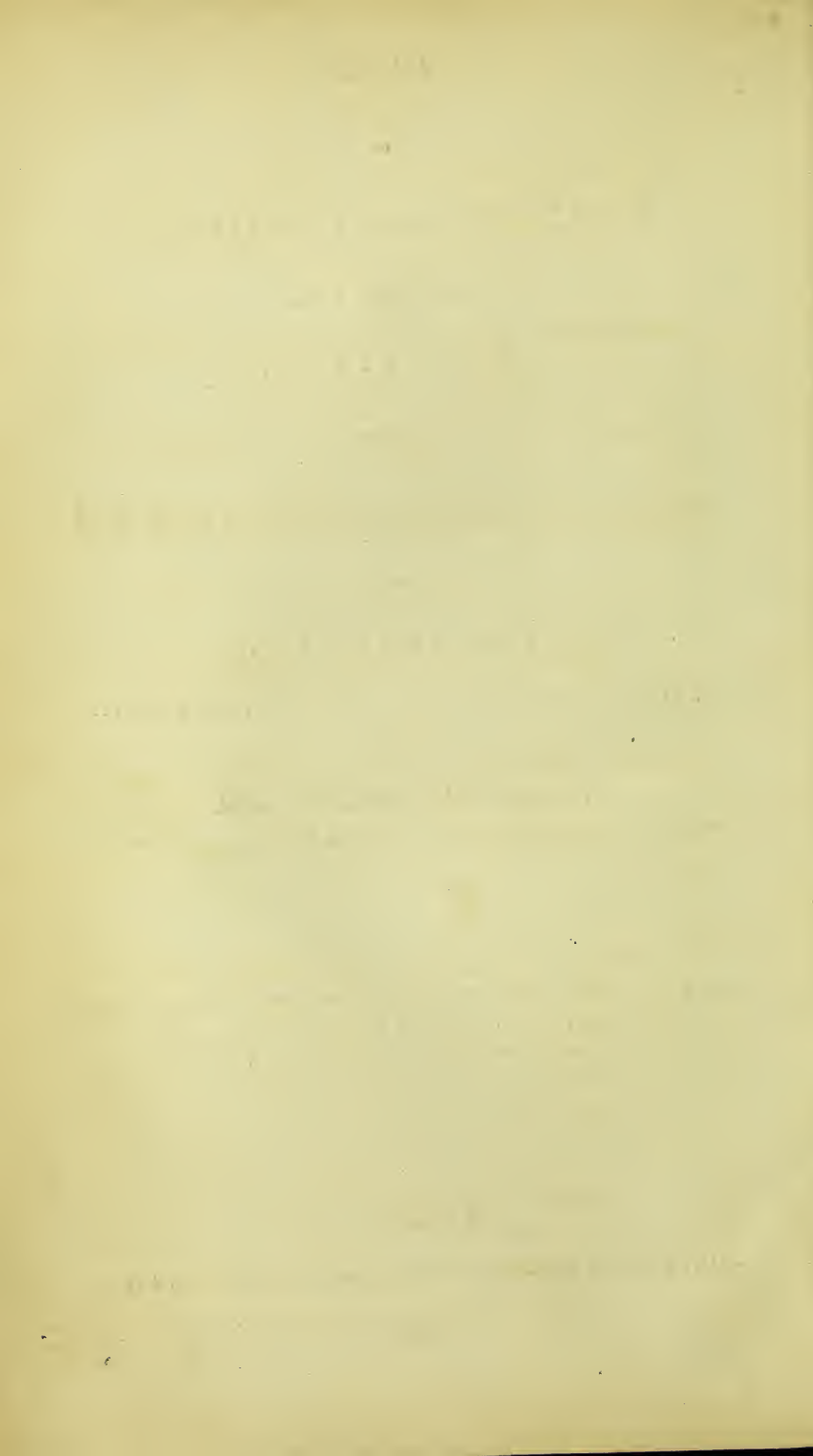
SURGEON TO ST. GEORGE'S HOSPITAL, AND LECTURER ON SURGERY.

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CASES
OF
SLOUGHING ABSCESS
CONNECTED WITH THE LIVER,
WITH SOME REMARKS
ON
ENCYSTED TUMOURS OF THAT ORGAN,
BY CÆSAR HAWKINS, Esq.

SURGEON TO ST. GEORGE'S HOSPITAL, AND LECTURER ON
SURGERY.

READ 11TH DECEMBER, 1832, AND 26TH FEBRUARY, 1833.

PART I.

AQUEOUS ENCYSTED TUMOURS.

CASE I.

WILLIAM HOLLOCK, æt. 31, was admitted into St. George's Hospital, under the care of Dr. Seymour, December 23rd, 1830, giving the following history of himself.

He said he had lived somewhat intemperately for several years in the East Indies, where he had suffered from liver complaint. About seven weeks before his admission he was seized with pain in the right shoulder, followed in a week by violent pain in the situation of the liver, and about a fortnight after this, he perceived a swelling in the right hypochondrium; he was bled and had had leeches applied, and had been salivated by mercury, but without any diminution of the swelling, or mitigation of his sufferings.

The swelling was of an oblong shape, extending across the abdomen above the umbilicus, to the extent of about four inches, and was situated in the epigastrium and under the margin of the ribs on the right side. The tumour appeared to be connected with the liver, and it seemed that some hardness could be felt in that organ on each side of the swelling, which was very tender and painful, and fluctuated obscurely; but there was no redness of the skin, and the abdominal parietes appeared to be moveable over the surface of the tumour. He complained of constant cough, with copious mucous expectoration. He was thin and looked several years older than he really was, and had an expression of great anxiety from intense suffering. His appetite was bad, the pain kept him constantly awake at night, the urine was high coloured, and there was a light yellowness of the skin and of the conjunctivæ, scarcely amounting however to jaundice. The pulse was 80 and feeble, the tongue clean and moist.

I was requested by my colleague to see him, and on the 15th of January, the tumour having become more prominent, and the fluctuation more evident, it was determined that it should be opened. I passed a trocar into the most prominent part of the swelling about two inches from the margin of the ribs towards the umbilicus, which entered the cavity of the supposed abscess at a depth of about three inches. Five or six ounces of fluid were evacuated through the canula at the time, without any pressure, and a good deal of the same fluid continued to escape through a

gum catheter, which was left in the puncture. The fluid which was removed, was not like common pus, but thick and adhesive, of a dark, yellowish green colour, and of a peculiar though not offensive odour, and upon being mixed with nitric acid, it appeared to contain biliary matter.

He was much relieved by the operation, the cough being lessened, and his rest better; and his health continued to improve till February 18th, when he had gained a little flesh, the discharge during the whole of this time having continued of the same quality, and in considerable quantity. I had been obliged however, on February 1st, to remove the catheter, and slightly to enlarge the wound, the consequence of which was the admixture of a good deal of fluid blood with the matter, the bleeding appearing to take place from the interior of the cavity.

At this time, February 18th, the edges of the puncture ulcerated slightly, the skin around became inflamed and very tender, and he suffered a good deal of pain, with increased discharge from the cavity, which continued till the 22nd. A circular projection now took place on the left side of the aperture, as if the matter of the original abscess had not a free exit, or as if another collection of fluid was taking place; I therefore made another puncture with a broad lancet, about two inches and a half from the first, which gave exit to an ounce of the same fluid as before, with a good deal of arterial blood.

He was still more relieved by this than by the former puncture, the discharge became more purulent and diminished in quantity, his health and spirits improved so much that he was able to walk about on the 1st of March, and by the 18th of April, three months from the first opening of the abscess, the cavity seemed nearly filled up, and he expected to leave the Hospital in a short time.

Now, however, what little discharge remained became mixed with a great deal of arterial blood, and the two apertures began to slough, with much redness of the skin; he began again to look thin and pale, with so much depression of strength that several ounces of brandy and an equal quantity of wine daily appeared necessary to prevent his actually sinking; and he fell into a complete state of despondency, expressing his conviction that he was going to die. He suffered at the same time such acute pain, that six grains of acetate of morphia in the day scarcely gave him any rest, his stomach being also irritable, so that he could not take laudanum.

On May 3rd, the two punctures were joined together in a black sloughing sore, about four inches broad, and two and a half in the short diameter, in the centre of which an aperture still admitted the probe into the original cavity, (which seemed nearly filled up,) below the integuments and muscles, the examination being always extremely painful. The black slough in the centre was surrounded by a thick

prominent circle of integuments, the edges of which were everted and ragged; and below the edges of the ulcerating and sloughing skin, were projections of unhealthy fungous substance, of a whitish colour; and each of these masses added to the size of the sore, as they were successively destroyed by sloughing. The skin around the ulcer was excoriated by the separation of the cuticle, and a circle of skin, three inches broad, all round the ulcer, was thickened and hard and prominent, and of a dark red colour. The discharge from the central opening, and from the surface of the ulcer was thin, and wholly unmixed with pus, but was accompanied with considerable hæmorrhage, and had a very peculiarly nauseous and foetid smell.

The prominence formed by the integuments and muscles round the ulcer, (which prominence could not be distinguished from the liver,) with the hæmorrhage and peculiar discharge, and the unusual progress and singular appearance of the sloughing sore, (wholly unlike an ordinary gangrenous ulcer, or the sore of hospital gangrene,) suggested to myself, and to many other gentlemen who saw it, the idea of there being a tumour of *Fungus Hæmatodes* in the liver, with which the original abscess had been connected.

The same process continued till June 4th, the sloughing during the whole six weeks having been

almost uniformly progressive, but now and then increased pain was observed, with more of the surrounding redness, and of the projecting masses below the edges of the skin, and the sloughing at these times became more rapid. The surface of the sore was now about fourteen inches broad, and ten in its lesser diameter, from above downwards; great masses of dead skin and muscle had been sometimes cut away, but no tumour had made its way outwards, which seemed at one time probable; the sloughing having also not quite destroyed the whole thickness of the abdominal muscles. Nearly the whole of the abdomen and lower part of the chest around the sore was now of a dark red colour, and presented the prominent and hardened appearance before alluded to, but in a less degree than when the ulcer was smaller. He had now become much emaciated, and required much support, but his appetite did not fail, and he seemed chiefly affected by the excessive pain which prevailed to the last. There never was the least attempt to throw off the sloughs, and form granulations, the sloughs being the whole time attached to the living parts.

He died June 11th, worn out by the pain and irritation, about five months after the abscess was first opened.

It is scarcely necessary to mention the variety of local remedies that were employed to check the sloughing: carrot poultice, stale beer poultice, hem-

lock poultice, solutions of opium and hemlock; stimulants of elemi, turpentine, Fryar's balsam, Peruvian balsam, Barbadoes tar; black wash; solutions of mineral acids and of the chlorides, and concentrated nitric acid. On the whole he seemed to be most relieved for a time by chlorine washes, and by a mixture of conserve of roses with goulard and laudanum, but nothing appeared to have any decided influence in stopping the disease.

On examination after death, it was found that nearly the whole thickness of the abdominal parietes had been destroyed, so that little besides the peritoneum remained, which adhered in part to the corresponding surface of the liver; there was no sign of peritoneal inflammation even close to the sloughs, though so near the membrane. To our great surprise there was no disease whatever of the liver, except slight condensation and granulation, such as is found in persons accustomed to spirits, but this change was by no means well marked. There were no remains of the cavity, which formerly contained the matter, and the only morbid appearance found was slight thickening of the peritoneal covering of the liver, united with that which lines the abdominal muscles; this thickening having taken place to the extent of about an inch, and to the depth of little more than a line, in the centre of which was seen a white substance, looking like a cicatrix, which extended perpendicularly into the liver, to the depth of about half an inch, around which, however, the liver seemed as little

altered in appearance as in any other part. All the other viscera appeared to be quite healthy.

CASE II.

Mary Mullens, æt. 22, was admitted into St. George's Hospital, April 30th, 1832, under the care of Mr. Babington, who has been so kind as to give me the following history of the case, which I frequently saw during its progress.

Three months before her admission, after what she called a violent cold, she was attacked by pain in the region of the liver, and about a month after the pain commenced, she observed a small swelling about three inches above the umbilicus, and midway between the linea alba and the edge of the lower ribs on the right side. The swelling had been progressively enlarging since that time, with very considerable pain; she had become jaundiced, and her general health was much disordered. She had been bled, and had had leeches applied.

On her admission there was a large fluctuating tumour, situated at the under margin of the liver, and apparently intimately connected with it, with considerable induration around the swelling, which prevented the outline of the liver itself from being distinguished. There was considerable pain and tenderness on pressure; the whole surface of the body, and the conjunctivæ were of a very light yellow tinge;—the pulse low and weak, and very rapid;—the tongue

dry and covered with a foul brown fur ;—the countenance anxious, as if she was suffering from confinement of matter.

The next day, May 1st, a needle was introduced into the swelling, and on its being ascertained that it contained matter, the opening was enlarged by a lancet, and above 8 oz. of matter evacuated, which gave her immediately great relief from pain ; it was allowed subsequently to escape into a common poultice. The fluid, which was evacuated, was thin, and of a light brown colour, and could scarcely be called purulent ;—it was mixed with nitric acid, but the existence of bile in it was not satisfactorily made out, as it appeared to have been in the former case.

The relief from the pain and fever continued, and she was on the whole less jaundiced, but she had occasionally an attack of fever, and increased pain and yellowness, which was always relieved by a calomel and senna purgative. The discharge continued to be of the same kind, but was occasionally mixed with blood.

In the beginning of June, though her general health was on the whole improved, the discharge became nearly constantly dark, as if mixed with blood ;—excoriation came on in the skin around the puncture, which, by June 26th, extended over a surface as large as an orange, but unattended with much pain, and the integuments below the excoriated part, were hard and prominent, as if germinating

a fungus ; the depth and circumference of the cavity were, however, now a good deal diminished.

In a few days after this report, the hardness was succeeded by sloughing of the aperture, which spread slowly and gradually, but with occasionally increased rapidity to a considerable size. The hardness and redness of the skin and separation of the cuticle around the ulcer always preceded the sloughing, and it was observed that a deeper orifice, probably that in the lower tendon of the rectus muscle near the sac, increased slowly in size, while the sloughing of the integuments and abdominal muscles above took place to a much greater extent. The discharge still continued thin and watery, and occasionally mixed with blood, and the smell was peculiarly nauseous and disagreeable, and the excoriation of the skin was invariably greater if the discharge was allowed to rest upon the surface. Masses of white fungous projections were sometimes seen in the cellular texture, where it was exposed by the sloughing of the skin. A variety of applications were employed without avail, as in the former case, and the patient sunk under the disease on the 26th of October ; at which time the sloughing surface was about seven inches broad in one direction, and of nearly the same extent in the other, the sloughing process having thus continued for nearly four months.

The cast of the ulcer, which is presented to the notice of the Society, was taken about the middle of

this period, but does not sufficiently point out the differences between the characters of the sloughing sore in these two cases, and those of ordinary gangrenous ulcers; the central orifice also at the bottom of the slough is scarcely shewn in the cast, but may be perceived in some measure in the preparation of the diseased parts, which I have also placed upon the table.

On examining the body it was found that the sloughing had destroyed nearly the whole thickness of the abdominal muscles, in the centre of the sore; the peritoneum lining them being loosely adherent to the surface of the liver, and both layers of this membrane being dark coloured, and almost, if not quite, dead. The cavity of the peritoneum, however, was entire, nor was there any trace of inflammation except to a very small extent round the central opening. The structure of the liver was remarkably healthy throughout, and it was of its natural size; on making a section of it from behind, towards the slough, the line of its natural surface was also seen to have been preserved, but close to the peritoneal covering was a yellowish white mass about the size of a small nut, with slight condensation of the liver around it to the extent of an inch. This substance was broadest towards the slough, and its apex extended about half an inch into the substance of the liver. There was no appearance of the cavity in which the matter was originally confined, unless both in this, as well as in the former case, the white substance was to be regarded as a kind of cicatrix

left by the complete obliteration of the cavity. The other viscera were quite healthy.

Throughout the whole progress of this second case the sloughing was much less violent than in the first ; there was much less redness of the skin, less induration, less pain and tenderness ; the hæmorrhage was not nearly so great, and the patient had less appearance of suffering and anxiety ; partly, perhaps, on account of the slower progress of the sloughing, and partly from her having been of a much less irritable temper than the other. But with these comparatively trifling differences, the two cases were very similar to each other. Both of these patients were seized with symptoms of inflammation of the liver, followed by the formation of a tumour, containing fluid, and apparently connected with the liver, and in both of them the fluid was not like that usually contained in an abscess of the liver, though in one, if not in both of them, bile was mixed with the fluid. The patients were both relieved for a time by evacuating the fluid, and the cavity appeared to contract, with proportionate diminution of the discharge, and after death, they were found so far obliterated, that it was difficult to decide positively where the fluid was situated, unless it is conceded that the little firm spot before described, was the remains of the cyst in which the fluid had formerly been contained. In both cases, about a month after the puncture was made, a new action seemed to take place, the discharge became mixed with blood, and a

sloughing sore was produced, having a peculiar appearance, and attended with excessive fætor, and wholly unchecked by either local or constitutional remedies; the aspect of the sore being so peculiar as to suggest the idea of its being the result of a malignant disease, and probably being of the nature of fungus hæmatodes. So singular indeed was this appearance, that, notwithstanding his experience of the result of the former case, my colleague could not help entertaining the same opinion, when the second case came under his own care.

Hollock, indeed, appears on the first commencement of this change in the actions of the part, to have had strength of constitution to throw it off for two months longer, but when it re-commenced, the progress of the sloughing was so much the more rapid; so that he was carried off by it ultimately in the same time as Mullens; both the patients dying about five months after the abscess was opened.

Yet when these patients were examined after death, not only was there no fungus hæmatodes of the liver, but in one case this organ was remarkably healthy, and in the other there was found so little deviation from the natural structure, and that alteration of such every day occurrence, as to be quite insufficient to account for the very singular appearance of the disease, which, as far as I know, has never been described.

It is quite clear, I think, that although the first

symptoms of the disease resembled those of *abscess in the liver*, they were not really cases of this kind. The matter evacuated was not purulent, and did not resemble what I have seen in any case of abscess of the liver;—when an abscess forms in this viscus, it takes place in its *substance*, not immediately *below the peritoneal membrane*, and when it makes its way towards the surface, it leaves abundant evidence of the inflammation and ulceration which have attended it;—nor could the cicatrix of an abscess of this organ be so wholly local, as to resemble little white bodies, which seemed to be the remains of the cysts in these cases. The instances indeed in which an abscess of the liver does cicatrize, are extremely rare, and such a process is at least not likely to take place, without a particle of healthy pus, and while a formidable sloughing sore communicated with it; nor do I know any case in which sloughing of a peculiar kind took place after the puncture of an abscess of the liver.

Neither were these cases, which I have narrated, instances of *abscess in the abdominal muscles*. It is true that an abscess, situated *over* the liver, will sometimes produce pain in the right shoulder, and jaundice; and may thus suggest the idea of its being *within* the liver, but such a mistake can only take place previous to a puncture being made. The depth and the situation in which the matter was secreted, in these cases, and the nature of the fluid at once disprove this supposition, independent of the preceding symptoms. In passing the trocar into the cavity, I thought the depth of two inches must, in a thin

person, have penetrated the thickness of the parietes of the abdomen; and when it had reached this depth, I withdrew the trocar, to see if any fluid would flow through the canula, but I was obliged to pass the instrument nearly an inch deeper before the point entered the cavity, in doing which there was a sensation conveyed to my finger of its having passed through a thin layer of the hard texture of the liver. The fluid was also in both cases such as I have never seen formed in abscess of cellular membrane, and certainly in one, if not in both of them, was mixed with bile, which is scarcely likely to occur in an abscess of the abdominal muscles which has proceeded inwards, extravagant indeed as such a supposition must at once appear.

My impression, from a consideration of the symptoms, and peculiar progress of these cases, and the examination of the parts after death, is that the disease originated in one of those *encysted tumours*, which not unfrequently form on the surface or at the margin of the liver, below the peritoneal coat, and which may be termed *aqueous encysted tumours*.—These cysts are met with also in a variety of other situations, on the surface of the spleen or kidney, in the spermatic cord, where they are called encysted hydroceles,—in the orbit—in the brain—in the neck—or breast. It is in the ovaria, however, that they perhaps occur most frequently, where they constitute a form of encysted dropsy, described by my friend and colleague Dr. Seymour, and other pathologists,

as depending on an enlargement of the Graaffian vesicles. It is here also that they are seen of the greatest dimensions; in a patient for instance, whom I tapped for the first time in December 1830, I have removed, within the last twelve months, at nine different operations, no less than 530 pints of watery fluid; so that in addition to the ordinary secretions of the body, there must have been formed in the sac on an average, during the whole of this time, about a pint and a half daily, and yet her health has not suffered materially except when the distension becomes very great*.

It has been imagined by Dr. Hodgkin and some other writers, that these cysts originate in the obstruction of an excretory duct in a secreting organ, and Sir A. Cooper in describing a disease of the testis of an analogous, though in some respects different kind in that organ, advances the same opinion of the cells which are there found; but as the enlarged cysts connected with obstruction of the pancreas or salivary glands contain, in their simple state, fluids resembling the natural secretions of those glands, while the cysts in the liver or kidney contain nothing in the least like bile or urine till inflammation has taken place,—and as the encysted tumours of this kind in the liver contain precisely the same fluid which is met with in corresponding encysted tumours of the brain or other parts, where there are

* Since this was written, the quantity removed within twelve months amounted to 620 pints.

no excretory ducts,—I am more inclined to attribute their formation in *all* cases to the same cause, (whatever that may be,) than to suppose that they sometimes originate in an obstructed duct, and at other times in cellular texture.

In the 15th Vol. of the Transactions of the Society these cysts, which form in the liver and other situations, are termed by Dr. Hodgkin, *adventitious serous cysts*, from their resemblance to the serous membranes in structure and in the nature of their contents; and in the last volume the same term *serous cyst* is employed by Mr. Lawrence in nearly the same sense, when speaking of some cysts which had been under his care. But it appears to me that in speaking of them in the liver, and perhaps in other situations also, the term *aqueous encysted tumour* will better express their nature and origin.

In the first place the term *encysted tumour* seems to suggest at once the idea of a single membrane secreting its contents, while *serous cysts* are met with in circumstances where they cannot be called *encysted tumours*. There is, for instance, an occasional though rare form of fatty tumour covered by a membrane which is more like the serous membranes in one respect than the cysts we are speaking of, as the thin cyst belonging to it, has its reflected and loose portions, like the pericardium, distinct and moveable upon each other though not containing fluid. Delicate cysts secreting serous fluid are also met with in at least four other orders of tumours,

besides the kind at present under consideration, one of which only, resembles them enough to be called an encysted tumour, and this other order, which is also found in the liver, may be called an *hydatid encysted tumour*.

The *aqueous encysted tumour*, and the *hydatid encysted tumour*, will thus form two orders of a class, in which may be included three others also, which might properly perhaps be called the *sebaceous encysted tumours*, the *bursal encysted tumours*, and the *congenital encysted tumours*; the last three of which, however, do not either of them I believe occur in the liver, and I shall not therefore further allude to them at present; though I must confess there seems to be so much confusion in the terms used in the description of the numerous cases in which *cysts* are met with in different tumours, that I should feel almost inclined to attempt a practical arrangement of them at some future time, unless the subject is previously taken up by some more competent person.

2dly. I prefer the term *aqueous* encysted tumour to that of *serous* encysted tumour, because probably in the origin of all of them the contents are not *serum*, but nearly *pure water*, till the secretion has been altered by inflammation and other circumstances. In other situations indeed, the tumours seldom increase to any great size without some inflammatory action, in consequence of which albumen is deposited, but it will be seen in the cases I shall subsequently mention that the cysts increase in the liver to a great

size, and yet heat will not produce coagulation. This accords with the observations of Dr. Marcet*, who found on examining an hydatid as he terms it, (by which it is evident he means an aqueous encysted tumour attached to the kidney,) that 1000 grains of the fluid contained in the cyst, left 27·3 of animal matter, which he terms *muco-extractive* matter, which was not coagulated by heat, nor gelatinized by cold or concentration, with a saline mass weighing 8·7. In another case, which he describes, a woman laboured under some symptoms of hydrothorax, and a tumour appeared on the side of the chest, which was punctured, so as to afford exit to about a pint of clear and colourless water, which Dr. Marcet at once suspected to have come from an encysted tumour of the lungs, because it contained *muco-extractive* matter, and not *albumen*. I have under my care at the present time, a child with a tumour at the side of the abdomen, the history of the formation of which led me to suppose that it was formed by serous effusion into the peritoneum in consequence of an injury, but upon puncturing it, 18 ounces of water without albumen were evacuated, rendering it probable that the fluid is connected with one of the very tumours under our consideration attached to the liver or kidney, unless it has been derived from a cyst of fungus hæmatodes in which similar fluid is often found†.

If then we pay regard to the nature of the fluid

* In the 2d. Vol. of the Transactions, p. 376.

† This case is detailed at p. 82.

contained in these cysts in the liver, the term *serous cyst* is only applicable to the middle period of their growth; after the fluid has lost its aqueous qualities, and before it has been further changed into purulent fluid, or some one of those numerous kinds of liquid or half solid substances which are sometimes found within the cysts. The name *aqueous encysted tumour*, being derived from their first formation will on the other hand be always applicable to them, if the subsequent changes which the fluid undergoes are borne in mind.

3dly. I prefer this term to that of *serous cyst*, if we regard the *structure* of the cyst itself, as the membrane which secretes the aqueous fluid undergoes considerable changes, in general accordant with the alteration of the secretion. The serous cyst therefore, if the name is given to it from its structure without reference to its contents, becomes changed into a fibrous cyst, or a half solid tumour, or a cartilaginous or an osseous cyst, from some alteration in the action of its vessels during its growth. In the liver indeed, the cyst is more frequently changed into bone, than into a very firm, fibrous cyst, such as is frequently seen in other parts of the body; but I shall mention one case in which even in the liver the cyst was about a quarter of an inch thick.—It may be said, perhaps, that somewhat similar changes are observed in the natural serous membranes, and on this account no doubt the term serous cyst is less objectionable than for the other two reasons I have given. On the whole, how-

ever, I think an *aqueous encysted tumour* is a name which will best express the nature and origin of the tumours, in which I believe the two cases which I have already related, first originated; though any term which is derived from one period only of a disease must be received with considerable latitude, if it is employed still, when various changes have been effected in it.

Every person who is in the habit of examining the human body after death, must have often seen these aqueous encysted tumours on the edge or surface of a healthy liver, or slightly embedded in its substance, where they are met with of various sizes, but seldom above that of a walnut; but the fact of their enlargement so as to constitute a disease, and the symptoms produced by the tumour during its progress, are probably little known, and often confounded with those of other diseases.

Indeed the cyst will sometimes increase to a considerable size, and yet the symptoms will remain comparatively trifling as long as the first simple characters of the complaint are still preserved.

CASE.

A boy about twelve years of age, was admitted into St. George's Hospital, under the care of Dr. Chambers, in August, 1822, when I resided there as house surgeon, having a tumour of considerable size below the ribs on the right side, the ribs being raised

by the tumour, which evidently fluctuated. He had not the least disturbance of the system, nor any derangement of the functions of the liver, much less were there symptoms of an abscess of that organ; the skin was quite moveable, and free from inflammation, and slight inconvenience from the size and pressure of the tumour, was alone complained of. After he had been in the hospital a short time, a flat trocar was introduced by Mr. Brodie below the ribs, in the part where fluctuation was most distinct, and a pint and half of clear colourless water was drawn off, which did not appear to contain any albumen, as no coagulation was produced by heat. Pressure was made by a bandage after the operation, which appeared to produce complete obliteration of the cyst, for the wound healed directly, the boy had not the least fever or other bad symptom from the operation, and left the hospital perfectly cured.

By the curious coincidence which is so often observed with regard to unusual medical cases, Mr. Brodie had under his care nearly at the same time, another case of the same kind, which he has published an account of in the *Medical Gazette**, these being at the time of the publication, the only two cases of the kind which he had seen.

CASE.

The greater size of the tumour in this patient, a

* Vol. I. p. 334.

young lady of 20 years of age, prevented her from taking exercise, and from sleeping except in a particular position; and there seemed to be some slight inflammation, as she had some pain at the commencement of the disease, a year or two before, which was increased before the operation, and she suffered from a troublesome and almost incessant cough for the first two or three weeks afterwards. Three pints of the same watery fluid were evacuated, uncoagulated by heat, and with the smallest possible quantity of animal matter. The result of this case is, however, more conclusive than the former, as Mr. Brodie had seen the patient six years afterwards, at which time there had been no return of her former symptoms.

These two cases will therefore serve to show, that, in the early stage of the disorder, while there is a little or no inflammation, the symptoms produced by the tumour are purely those which arise from its pressure upon the liver and adjacent parts; and they serve also to show that a puncture may be safely made into the cyst with a trocar, with the view of obliterating the cavity by union between the sides of the cyst. The next case will show, however, that even after inflammation has taken place, so as to alter the nature of the fluid in some measure, the same result may be obtained.

CASE.

A boy, of 14 years of age, was under the care of

Dr. Thomson*, in consequence of a tumour in the right hypochondrium, tense and elastic, and projecting forward so as to be of the size of the fist, and affording an indistinct sensation of fluctuation. The tumour had been growing for two years, and the boy had been twice salivated as for hepatitis, but there never was any pain; there was some sallowness, but no jaundice of the skin, and the general health was unaffected; the boy complained only of considerable difficulty of breathing, and of being wholly unable to sleep except in a nearly erect posture. The tumour was punctured with a hydrocele trocar, and upwards of three pints of watery fluid evacuated, which, however, slightly coagulated on the application of heat. The wound healed, and the disease probably did not return.

Sometimes it appears that the cyst may increase to a very great size, and yet the symptoms may not be sufficiently evident to avoid the chance of mistake.

CASE.

Dr. Thomas† mentions a lady who was treated for a long time as for an enlarged and indurated liver, but without those symptoms of biliary derangement, which ought to have led to such a conclusion; and on being tapped sixteen pints of water are said to have been drawn off, the last part of the fluid being mixed with a little lymph. It is said to have been a

* Med. Gaz. Vol. I. 468.

† Practice of Physic.

large hydatid, by which, however, is evidently meant an aqueous encysted tumour. The result of the operation is not mentioned, so that it may probably be concluded that the case ended fatally.

But although it appears from this case that a very large quantity of fluid may be collected in these cysts before such pressure is produced as to render an operation absolutely necessary, it will in general be found, that long before the tumour reaches this great size very urgent symptoms are produced by it. These symptoms will still be principally produced by the encroachment of the tumour upon the thorax and consequent compression of the lungs, and if the tumour is so situated as to enlarge chiefly in that direction, the symptoms may for a long time be very obscure, and appear like hydrothorax or hepatization of the lungs, or actual effusion of fluid into the pleuræ may take place; each of which circumstances will be seen in the following cases.

Such a case as the following, indeed, which is described in the *Hist. de l' Acad. des Sciences*, (1732,) would have probably puzzled any person, as the liver and lungs were all affected.

C A S E.

A soldier complained, for two years before he died, of very great difficulty in breathing, so that he could only exist in a sitting posture. There was found

after death a cyst on the superior surface of the liver of about three inches in diameter, and containing a yellowish green limpid fluid, and at the bottom of each lung, below the pleura, there was a cyst of a white colour, and a line in thickness, each cyst being about six inches in one diameter, and four in the other, and containing a clear and limpid fluid. All three of these cysts were, no doubt, aqueous encysted tumours.

The symptoms will also become obscure if the cyst is much thickened, so as to give very much the same feeling as that which is communicated by a solid tumour. Dr. Abercrombie mentions a case of this kind *, where fluctuation was with difficulty perceived, although a cyst was punctured, from which 9 or 10 pounds of clear serous fluid were evacuated, and when the patient died, a few days afterwards, another cyst was found between the liver and the posterior part of the diaphragm, containing no less than 18 pounds of clear fluid, in addition to the large quantity that had been extracted from the anterior cyst. The complaint was of only about a year's standing, but from their great size, these two cysts had so much injured the patient's constitution, that although he was relieved by the operation, his strength quickly failed. At the bottom of one of these cysts were two flat bodies consisting of a roll of soft gelatinous membrane which seem-

* Abercrombie on Diseases of the Stomach, p. 356.

ed to have been detached from the interior of the cyst.

But if the existence of a cyst containing fluid on the surface of the liver be large enough to be distinguished through the abdominal muscles, it may be right to puncture it with care, in order to prevent a fatal result from rupture, even if the pressure is *not* such as to render an operation urgent on that account alone.

C A S E.

A man was brought to St. George's Hospital in June, 1821, very soon after he had fallen from a waggon, some empty baskets having also been thrown down, which fell upon his abdomen as he lay upon the ground. He had been bled before his admission, and was in a very low state, with laborious respiration, and violent pain, and presented the appearance of a man dying of internal hæmorrhage, except that his countenance was not so pallid as it usually is in such cases. His pulse soon rose, and he was again bled, and had thirty-six leeches applied to the abdomen, which had become very tumid and painful. He died, however, a few hours after his admission in excruciating agony.—On opening the abdomen about two quarts of slightly coloured serum were found in the cavity of the peritoneum, which had escaped by the rupture of a large cyst, that lay loose and flaccid on the right side, reaching from the

diaphragm above, to which it was firmly united, nearly to the spine of the ilium. This cyst occupied almost entirely the place of the right lobe of the liver, a thin layer of which was partly expanded over the cyst, while the left lobe and lobulus spigelii were much larger than natural, but perfectly healthy. The interior of the cyst was irregular, and contained, lying loose within it, a thick membrane which was called by some an hydatid, but which was, no doubt, a layer of lymph thrown out by the interior of the cyst, similar to the bodies already mentioned in Dr. Abercrombie's case, and disengaged by the rupture; for its outer surface corresponded exactly with the irregularities of the inside of the cyst, and it could be separated into many layers, the edges of which floated loosely from its inner surface into the serous fluid, which the cyst contained.—No history could be obtained of the previous symptoms, which may have existed in this man, but he had probably not suffered much, as he was actively engaged at the time of the accident, and had the appearance of good health. At all events the fluid was not in the least degree purulent, and although its nature appeared at the time obscure, I have now no doubt that it was one of these aqueous encysted tumours.

This case then shews us the effects of further inflammation in the interior of the cyst, in the formation of a thick layer of lymph; and also the result of continued pressure upon the structure of the liver itself, ending in the expansion of a layer of the liver

over the cyst, and the almost entire destruction of the right lobe by absorption, without any suppuration, an effect which was also observed in a case I shall presently narrate.

It must not be supposed, however, that the danger of rupture by an accident will only attend a large tumour.

CASE.

A girl of 8 years of age, had a tumour in the situation of the liver for a considerable time, when she was pushed down violently, and the tumour suddenly disappeared. There succeeded severe inflammatory symptoms with violent purging, of which she died in a short time.—In the inferior and convex portion of the right lobe of the liver was a rupture to the extent of three or four inches, on separating the edges of which there appeared a cavity lined by a cyst, about a line in thickness, which had been ruptured in the same line, and contained nothing whatever, neither vesicles nor hydatids, nor any fluid, nor were its contents discovered, as the abdomen contained no more fluid than usual*.

I conclude, from this history, therefore, that the cyst must have been one of these encysted tumours, the contents of which, being aqueous, had been in

* Hist. de l' Acad. des Sciences, 1759.

part absorbed from the cavity of the peritoneum, into which it had escaped after the injury*.

It is not impossible that the cyst may sometimes be ruptured spontaneously, and a cure effected by the absorption of the fluid from the peritoneal cavity.

C A S E.

A man, after an eruptive fever was attacked with a sense of weight and pain in the epigastrium and left side, with troublesome cough succeeded by a tumour in the epigastrium. About a month afterwards he suddenly felt the weight detached from the situation of the chest, and descend into the lower part of the abdomen, and chiefly into the right ileo-colic region. There ensued violent pain and vomiting for two hours, succeeded by a state of syncope and insensibility for two hours more; the patient continued in a state of violent agony for some time, but in eight days was out of danger, the tumour not having again made its appearance†.

This case was believed by the narrator to have been an encysted dropsy of the liver, i. e. what I have called an aqueous encysted tumour.

It will be seen from the two next cases that the

* A similar case occurred to Dr. Gregory of Edinburgh, no fluctuation being perceived before the rupture, though apparent afterwards.—Abercrombie on Diseases of the Stomach.

† Ann. de Montpellier, v. 12.

further effect of these tumours will be the production of sickness and indigestion by pressure upon the stomach, hydrothorax, ascites, and anasarca of the legs from pressure upon the great veins, and a fatal disturbance of the general health.

C A S E.

A little girl fell, and received a contusion in the epigastrium, which was, however, little attended to, though she complained constantly of pain. In a year's time a tumour formed, which was hard, no fluctuation was discovered, and the skin was unchanged. The respiration became much impeded, the child became weak and emaciated, and after some time died.—In the cavity of the peritoneum were five or six pints of water, and in the liver were two cysts, each containing three or four pints of water. One of the cysts was situated in each lobe of the liver, and one of them had been ruptured, nearly the whole of the liver itself had been destroyed by the growth of the tumours, and the lungs also were much compressed. It is expressly observed that there were no hydatids, so that these two cysts were, no doubt, of the kind under consideration*.

The following very interesting case of this disease is related by Dr. Hastings †, which shews the great

* Journal de Medicine, Vol. I. p. 120.

† Midland Med. Reporter, Aug. 1829.

size these cysts may attain, and the symptoms which attend them, and in this case also two cysts were formed, but with the curious circumstance, if I rightly understand the account, of one cyst only being close to the abdominal muscles, while the other was above the liver, so as to push the viscus away from the diaphragm.

CASE.

The patient, a soldier, 37 years of age, was first attacked by pain in the hypochondrium and right shoulder two years before Dr. Hastings saw him, and the symptoms had gradually increased with great pain.—The abdomen was hard and tumid, and for the most part incompressible; fluctuation was perceived in the pit of the stomach, at first only when he was in the erect posture, but latterly, even when in the supine position, and when he coughed a considerable protrusion was observed at this part. There was also distinct fluctuation at the lower part of the abdomen.

He was tapped by means of an incision with a scalpel, about three inches below the point of the sternum, and about nine pints of fluid were evacuated, the nature of which is not stated. He was much relieved, but two days afterwards his breathing having again become laborious, the canula was a second time introduced into the former wound, and four pints

more of fluid were evacuated, after which there was a constant oozing till his death nine or ten days afterwards.

The seat of the whole of the fluid which had been evacuated is said to have been a fine membrane, forming largish cells, and situated between the peritoneal covering of the liver and the abdominal parietes, no communication existing between the cells of this membrane and the general cavity of the abdomen. The liver seemed almost to fill the cavity of the abdomen, and extended downwards nearly to the pubes, while it pushed up the diaphragm as high as the second rib. The liver adhered extensively to the diaphragm, and between the diaphragm and the liver itself, a vast cyst was formed, which contained nearly fourteen pints of bloody serum; the liver being in other respects healthy. In the abdomen were about eight pints of fluid, somewhat viscid and tinged with bile. The lungs were small and remarkably collapsed, and the cavity of the thorax contained several pints of fluid.

The dissection of this very interesting case is not so clearly described, as might be wished, but Dr. Hastings himself imagines both the cysts to have been instances of the aqueous encysted tumours of the liver.

It is said also there was a small quantity of purulent matter, but where this was found I cannot ex-

actly understand, but I think it is meant to have been discovered in the cavity of the abdomen; it is remarked, however, that no ulcerating surface was perceived from which the pus had been formed.

The preceding cases seem to me to illustrate all the symptoms of this disease, and its consequences upon the neighbouring organs, with the exception of suppuration, and a knowledge of them would in general, I think, enable a careful observer to ascertain the existence of the tumour, and to adopt the only means, which would be likely to relieve the patient from the pressure of the tumour, with a fair chance of success. A case is narrated, however, by Dr. Todd *, in which a mistake might be made, without discredit, on account of its rarity.

CASE.

A girl of 14 suffered much pain, succeeded by a tumour in the right hypochondriac and epigastric regions, extending even below the umbilicus, which evidently fluctuated to the right of the linea alba below the ensiform cartilage; the result being emaciation and anasarca, while her skin was of a deep orange colour. It was treated as an abscess, but there were no *rigors* or other symptoms, which could be considered as indicative of suppuration, but, as it appears to me, the symptoms were rather those of extreme irritation and pain from pressure, and might therefore be considered as perhaps arising from one of the

* Dublin Hospital Reports, Vol. I. p. 325.

tumours under our consideration, though the deep tinge of the skin and the anasarca are not often met with. This fluctuating tumour was opened and two quarts of viscid bile evacuated, with a little thin fluid which was supposed to come from the peritoneal cavity. The girl died the next day, when the tumour was found to have been formed by a singular distension of the gall-bladder and the biliary ducts; which still contained another quart of the same green bile, the liver being quite healthy, and the tumour having been produced by the pressure of what is termed a scirrhus pancreas upon the ducts.

There wants then but the occurrence of a higher degree of inflammation, than what took place in any of the preceding cases, and the production of suppuration, to carry the chain of connexion between a simple aqueous encysted tumour of the liver, and the tumours, the sloughing of which was related in the early part of the paper, and such a circumstance is found, I think, in the following case related by Dr. Stocker *.

CASE II.

A man was seized with pain in the right shoulder and right hypochondrium and slight jaundice, which were considered to indicate the existence of hepatitis. About a month afterwards there was a sudden discharge of blood and pus by stool, and a few days

* Trans. of the Coll. of Phys. in Ireland, Vol. I. p. 11.

afterwards, after a fit of almost complete suffocation, he coughed up from the lungs a large bason full of puriform matter. From this dangerous attack he nearly recovered, but never regained his health entirely, and suffered from occasional rigors, at intervals of a few weeks, puriform matter being still coughed up in small quantities. He died two years after his first attack, when the following appearances were discovered.

A *cyst* was found on the anterior surface of the liver, containing some purulent and grumous fluid. The interior of the cyst was of a vascular texture, and it extended from the left lobe of the liver to the stomach and spleen and to the small intestines, which were all united together; but the communication with the intestinal canal was not perceived, and even the aperture in the diaphragm, by which the matter had been discharged into the lungs was cicatrized at the margin. The liver was large and of a firm consistence, but did not form any part of the abscess, nor were there any tubercles in it.

It cannot of course be affirmed positively by any one who did not see it, that this abscess was in one of the aqueous encysted tumours, but from the terms employed, I think it at the least highly probable.—The existence of a cyst connected with the liver, but the liver being healthy and forming no part of the cavity of the abscess;—the expression *vascular nature* applied to this cyst, which can scarcely be said of an

ordinary abscess, the interior of which is generally more or less granulated and coated with lymph;—the words puriform and grumous fluid, instead of pus, employed to describe the contents of this cyst,—all lead me to this conclusion rather than to the idea of its having been an abscess of a more common kind.—The two cases of sloughing cysts seem to me to have been modifications of abscesses of the same kind, which had made their way towards the abdominal parietes, instead of ulcerating into the lungs and intestines.

From the peculiar nature of these cysts, and of their watery secretions, we should not expect that they would often suppurate, for the same reason that the serous and synovial membranes do not often form pus; we should naturally anticipate also, that when any thing like pus is formed in them, it would not be *healthy* pus, but partake more or less of the aqueous and mucilaginous secretions of the less inflamed cyst, and hence no doubt the cause of the peculiarity observed when the fluid was evacuated, and during the whole time they continued to discharge in the two cases alluded to. In Dr. Stocker's case, however, supposing it to have been one of this kind, as much ulceration was produced in cellular texture, especially in the formation of the large cavity in the lungs which communicated with the cyst, the secretion would necessarily be mixed with more of the usual kinds of pus. It is remarkable, moreover, and confirmatory of my opinion, that when an *hydatid encysted tumour* of the liver suppurates,

the cyst, which resembles the cyst of *aqueous encysted tumours* of this organ, forms a similar thick, tenaceous, or watery and mucilaginous fluid instead of pure pus.

It seems in the next place to follow as a necessary consequence of the nature of the fluid, that there should be less of the rigors and perspiration, which usually mark the formation and confinement of matter in ordinary abscesses; nor was this circumstance wanting in these two cases, and it may perhaps be looked upon as another diagnostic mark between an abscess of the liver, and suppuration in an aqueous cyst. In both of them the symptoms were rather those of intense suffering and irritative fever than of distinct suppuration, the indications of which, though sometimes obscure, are seldom altogether wanting in either the acute or chronic abscess in this important organ, and the rigors and perspirations are generally accompanied with more marked jaundice than in the aqueous tumour, even when suppurating; the skin being in one of these cases altogether free from a biliary tinge, and in the other the colour being a peculiarly light yellow.

It only remains for me to account for the remarkable termination of these cases, in the occurrence of frequently repeated hæmorrhage from the cavity of the cyst, and the singular fungous ulceration which took place around the openings. I cannot, it is true, do this by reference to any similar case, otherwise

I should have had to apologise more than I am perhaps even now called upon to do for the length of this paper, but the analogy of similar aqueous encysted tumours in other parts of the body will still bear out the probability; indeed the whole progress of the disease is similar to what takes place in other tumours of this kind, but I will confine myself at present to the hæmorrhage and fungous growth.

The occurrence of hæmorrhage in aqueous encysted tumours will be shewn in the following case, for which I am indebted to Mr. Brodie.

CASE.

A woman had a tumour in the neck apparently connected with the thyroid gland, which was punctured, and a small quantity of watery fluid evacuated, but the cyst now became filled with blood, and when re-opened, hæmorrhage continued to take place into its cavity. Mr. Brodie dissected out the cyst, which was thin and membranous, but the patient being of a bad constitution, sloughing took place, which process was also accompanied with a good deal of hæmorrhage, and the woman died of the disease.

So also, although the aqueous encysted tumour of the female breast, in which organ it not unfrequently occurs, will sometimes become obliterated by pressure after a puncture has been made, in the same manner

as in the corresponding encysted tumour of the liver, the wound will in other cases remain open and generate an unhealthy fungus.

C A S E.

A young woman attended as an out patient of St. George's Hospital with an encysted aqueous tumour at the upper margin of the breast, which fluctuated obscurely, and being punctured by Mr. Brodie several ounces of water were let out. The wound, however, did not heal, and the discharge continued from the cyst, the edges of the opening became thickened and everted and ulcerated, and an unhealthy fungus was generated, with a good deal of pain and constitutional irritation; a circular ulcer was thus formed by the growth of the fungus with very little loss of skin, which was about three inches in diameter, raised and prominent like the ulcer of fungus hæmatodes, but with a central depression leading into the opening of the cyst. There was a copious discharge of thin and very foetid fluid, the whole breast was enlarged and condensed around the cyst, and the skin around the ulcer to some extent had a dark inflammatory appearance. She was under these circumstances taken into the hospital, and the whole of the diseased mass, including the breast, was removed by Mr. Walker. The wound healed readily, and the patient has since continued well.

A sebaceous encysted tumour will also occasionally inflame and ulcerate, and throw out an unhealthy fungus, with much constitutional disturbance.

When such a fungous tumour is formed under these circumstances, it is often spoken of as having assumed the characters of fungus hæmatodes, but it is I believe wholly different. These cases generally get well after the operation, there is no contamination of the neighbouring parts, nor of the absorbent glands, and the surgeon need be under no apprehension of fungoid disease being established in other parts of the body. I am inclined to think the mistake has arisen from the aqueous encysted tumour having been confounded with those cysts of water or serum which are conjoined with a solid tumour of really malignant character.

Taking then the last two cases into consideration in conjunction with the several others which have been related, there can be little difficulty, I think, in coming to the conclusion that the first two cases, which seemed to present so many curious circumstances during their progress, were instances of *aqueous encysted tumours* on the surface of the liver, in which imperfect suppuration had been established, and in which peculiar actions were subsequently developed.—These cases are certainly rare in any stage of their progress, if we may judge by the little that any single person seems to know of the subject, and

the scattered notices, and confused statements, which are met with in authors.—Perhaps, therefore, the placing together a series of such cases, each of which is in some respects insulated from the rest, will illustrate all the principal facts connected with an interesting and important disease, which may be novel to some members of the Society, and therefore not undeserving of their attention.

PART II.

HYDATID ENCYSTED TUMOURS.

THE *aqueous encysted tumour* in any part of the body is very commonly spoken of as an *hydatid*, but I think very loosely and vaguely, so that two diseases which in reality are quite distinct from each other, are confounded together. The resemblance, which has given rise to this error, is the circumstance of there being in each case, in general, a cyst containing water, but it would undoubtedly be much better to confine the term *hydatid* to the parasitic animal, the *hydra hydatula* of Linnæus, which may become deposited and increase, in some mysterious way, in any part of an animal body. The *hydatid* is sometimes found in a cyst, which is most probably formed out of the adjacent parts; so that the whole tumour may thus be called an *hydatid encysted tumour*, but

in other cases the hydatids are found without any covering, or alteration of the cellular texture of the surrounding parts ; in either case, however, there is the essential difference between this disease, and the aqueous encysted tumour, which is made by the presence of a parasitic animal in the one case and not in the other. If there *be* a cyst around a quantity of hydatids, it is not to be considered that the cyst is an aqueous cyst of the kind we have formerly considered, which has no more tendency to have hydatids generated within it than the peritoneum has ; for when hydatids *are* generated within a serous membrane, they are generally enclosed in a cyst attached to and nourished by the vessels of the serous membrane, in the same manner as when they are generated within the liver ; they are also enclosed in a cyst, which is attached to, and nourished by the vessels of the liver. But in either case, whether the hydatid be enclosed in a cyst, or be merely situated in a cavity in the cellular membrane of any part, the hydatid itself has no attachment whatever to the living substance, it is not connected by vessels with it, and the hydatid is nourished by imbibition only, from the secretions of the animal in which it is generated.

The confusion between the two diseases has probably arisen in part from considering the cyst, in which the hydatid itself is enclosed, as constituting an essential part of the disease, and as being in fact the *parent* hydatid, but the membrane which is nourished

by vessels from the parts around, is not to be considered, I think, in any case as more than a *cyst*, and the cyst itself with the hydatids enclosed in it may be spoken of, not improperly, as an *hydatid encysted tumour*, and the term hydatid tumour ought in no case to be applied to any tumour in which a parasitic animal is not found, nor the term hydatid to any cyst which does not possess an independent vitality.

The hydatid generated in the human body is commonly a mere globular bag, consisting of two coats, enclosing a watery or mucilaginous fluid, and if pressed out of a tumour entire, has been seen to contract, so as to alter its figure, and if broken, will roll up in a manner very different to what takes place from the mere mechanical contractility of an elastic dead membrane, and it differs from the hydatid of the sheep, in which animal hydatids are so frequently found, in this respect, that the latter, the *tænia hydatigena*, has generally a mouth and neck added to its globular body, and is apparently endowed with a kind of locomotive power in addition to a vital contractility of a lower kind. I would observe, however, that the two species of hydatid are occasionally intermixed, or there is less essential difference between them than is generally imagined, for the hydatid of the sheep has sometimes no neck, and the human hydatid (Mem. of Med. Soc. of Lond. Vol. 2, p. 516,) has sometimes as distinct a neck, as is

usually seen in those which are taken from the lower animals *.

The term hydatid is however applied still more loosely by some writers, so as to mean almost any cavity whatever; such, for instance, is nearly the sense in which it is employed by Dr. Baron in his ingenious speculations upon the origin of tuberculous diseases.

It is much to be regretted also that the term hydatid is employed indefinitely even by those writers, whose experience teaches them how different the diseases are, which are frequently all spoken of together under the name of hydatids.

Sir Astley Cooper, for instance, in deference to this common but erroneous practice, speaks of four different species of hydatid tumours, one of which he denominates the *animal hydatid*, to distinguish it from the other diseases to which he has given the same name; it is then to this only that the term ought to be restricted, in order to avoid those errors both in theory and practice, which have arisen from the three or four different meanings which are attached to the same word.

* For an account of the generation and increase of hydatids in the human body, see a paper by Dr. J. Hunter in the second volume of the Transactions of a Society for the Improvement of Med. and Chir. Knowledge.

In the Hunterian collection the term *spurious hydatid* is employed by its great founder to describe the *aqueous encysted tumour* in the liver and other parts of the body, but this, though shewing his knowledge of the different nature of the two diseases, I would also wish to discard from medical language, to avoid the possibility of misconception.

I propose in the present part of the paper, to confine myself to the *hydatid encysted tumour* in the *liver*, as I did in the first part with regard to the Aqueous Encysted tumour, except where some peculiarity in other parts of the body will better illustrate its nature in this organ, and to place before the Society a succession of cases to illustrate the history of this disease, when it takes place in the liver, so as to complete the account of two diseases, which are probably but little known, as a very imperfect detail of them is to be found in any work with which I am acquainted.

The cyst in which the hydatids in the liver are enclosed varies in its thickness and texture, like that of the aqueous tumour, being sometimes thin and transparent, sometimes thick and firm, and at other times, in part converted into cartilaginous or osseous matter.

The fluid which is secreted by the cyst of the encysted hydatid tumour differs in different cases, being sometimes thin and watery and nearly colourless, and not coagulable by heat ; more frequently mucilagi-

nous, and of a yellow or greenish yellow colour, and when the cyst has been much changed in texture, the fluid becomes sometimes quite thick and tenacious, and there is often found on its interior a quantity of greasy secretion, like butter in consistence.

The number and appearance of the hydatids themselves will be found to vary very much. Sometimes there is a single large hydatid almost in contact with a thin cyst, with scarcely any secretion between its coats and the cyst itself. At other times there is a large quantity of thin fluid, in which a few globular hydatids, seldom larger than a small walnut, are seen floating, or a great number of smaller hydatids, with thick mucilage only between them of a dark colour; or again, in other cases, the cyst does not appear to have yielded proportionably to the rapid increase of these singular bodies, and the cavity is filled by a great mass of soft membranes, composed of the remains of hydatids broken down by pressure, and looking like half-dissolved isinglass. The existence of a single large hydatid is not so often observed in the liver, as it is in the breast, and some other parts of the body, and I am inclined to think, that some of the cases which are called large hydatids, are really instances of aqueous encysted tumours, which have been inflamed, and from which a membrane formed in the interior, and having the shape of the cyst, has been detached subsequently*.

* See the case at page 29.

C A S E.

In the *Journal de Medicine*, for instance*, is described a case in which, two or three months after a blow, a tumour appeared, followed by general dropsy and ascites, and a cyst was discovered occupying the situation of the right lobe of the liver, filled by five pints of water, one pint of which, at the bottom, was a milky kind of fluid, with the remains of what is called an hydatid, broken down after having filled the cyst, and forming a mass as large as the fist.—This appears to me to have been, not an hydatid, but a membrane, formed in the same manner as in a case at St. George's Hospital, mentioned in the first part of this paper, see p. 29, as having probably taken place in an aqueous encysted tumour, in consequence of inflammation.

It is probable that the state of the hydatids in the liver causes a material difference in the symptoms produced by the tumour, and that the greater the quantity of fluid in proportion to the number of hydatids, (i. e., the more resemblance it bears to the aqueous encysted tumours,) the less urgent will be the symptoms occasioned by it. It is certain, at least, that the hydatid encysted tumour is almost invariably fatal, long before the tumour has grown to anything like the enormous size which the aqueous encysted

* Vol. I. p. 1.

tumour is capable of attaining before it occasions the death of the patient.

It would appear, however, that if the increase of the tumour is not very rapid, it may attain a considerable magnitude, without producing more inconvenience than the sense of weight and pressure, the impediment to respiration, and slight irritation of the liver, which attend the aqueous encysted tumour, and which are indicated by nearly the same symptoms; viz. the difficulty of breathing, the inability to lie in particular positions, the cough, with pain in the right shoulder, pain and tenderness in the right hypochondrium, nausea, and vomiting, and slight jaundice. So that in this comparatively innocent condition, several years may elapse before much inconvenience is experienced, till at last emaciation and general disturbance of the system, sometimes anasarca and ascites, undermine the patient's constitution, and cause his death, before the further consequences of inflammation ensue.

In fact, wherever hydatids are situated, little suffering is experienced, except from the bulk of the tumour, as long as there is no great inflammation, and even then, provided an exit is afforded by the natural passages, or by ulceration, or by surgical operation, little danger need be apprehended, except in the important internal organs; and even in them the occurrence of hydatids is by no means to be regarded as invariably fatal, in which light they are

looked upon by many persons ; still less are hydatids to be considered as an evidence of malignant disease, though this also is an opinion which is entertained by many persons*.

Hydatids, indeed, are sometimes found intermingled with malignant diseases, as they are in healthy structures, but, (without entering into the supposed hydatid origin of malignant diseases generally,) it will readily be conceded by any one who has seen many cases of the disease, that hydatids are often found without any of the appearances, and not followed by any of the fatal consequences of malignant diseases ; it is but fair, therefore, that the circumstance of their union in the same tumour should be considered as a coincidence only, and not that the one disease is the necessary result of the other.

But if there is *no* exit for the discharge of the hydatids, and especially if there takes place inflammation of the cyst, a *small* tumour becomes dangerous, and frequently fatal.—In the brain, for instance, they will necessarily be fatal at an early period, and even in the orbit, i. e. near the brain, the irritation is sometimes so great as to destroy the patient†.

So also in the liver the peculiar situation of the tumours may render them fatal at an earlier period

* See a case of hydatids in the liver, related by Dr. Blackmore, of Plymouth, in the Medical Gazette, Vol. IX. 464.

† See Guthrie on the Eye, p. 167.

than they would otherwise have been. They are usually met with, like the aqueous encysted tumour, on the anterior and convex part of the organ, or partly in its substance, in which situation a good deal of pressure can be borne with impunity, but if their situation is different to this, the symptoms will be variously modified.

CASE.

A young man was in St. George's Hospital, under the care of Dr. Young, who had for some time expectorated bile, while none whatever seemed to enter the intestinal canal, and it was found that the common biliary duct, was completely obstructed by an hydatid just at its entrance into the duodenum. A considerable cavity was also found in the right lobe of the liver, communicating freely with a still larger one in the lung, the whole being full of bile and pus with hydatids of various sizes, all however empty and flaccid except a very few*.

In this case the absence of bile in the evacuations was a symptom different from what is generally observed in hydatid tumours of the liver, but jaundice did not occur; no doubt because the bile escaped by the lungs instead of being accumulated in the system. —In the following case (which occurred in the practice of Dr. Duncan of Edinburgh†) a different modification of the usual symptoms will be seen.

* Introd. to Med. Literature. † Edinb. Med. J. IV. 187.

A man had a tumour in the right hypochondrium with the usual symptoms which arise from an hydatid tumour, pain in the shoulder and liver, dyspnœa, cough, inability to lie or move in particular attitudes, with slight jaundice, but in six months' time the whole body was of a *deep yellow colour*, and the urine was loaded with bile, while the alvine excretions were perfectly white. When in the erect posture, a large circumscribed fluctuating tumour was observed in the hypochondriac and epigastric regions, which subsided immediately on his assuming the horizontal posture, when an uniform tense swelling occupied the whole abdomen. The urine diminished, while this was forming, and his legs and feet were sometimes œdematous.

The hydatid encysted tumour was here found in the porta of the liver, of the size of a large orange, and the vessels passed over and were pressed upon, or rather stretched by the tumour, so as to occasion the peculiar symptoms. From the mechanical obstruction of the vena porta and vena cava arose the ascites and œdema of the legs, and the complete closure of the biliary ducts occasioned the aggravated jaundice and white stools; the liver itself was from the same cause very large and of a mottled green colour, and the water in the abdomen was as dark as the urine.—The disappearance of the circumscribed tumour in this case is a circumstance that I have not observed, and which can only arise I suppose in cases where ascites has been induced. The means of

diagnosis afforded by manual examination is not very satisfactory in the hydatid encysted tumour, unless the proportion of fluid is considerable, though sometimes the sense of fluctuation is very distinct, almost as much so perhaps, as in the case of an aqueous encysted tumour, which I mentioned in the first part of this paper, before the fluid was evacuated *. In general, however, the fluctuation is less evident, so as to render it more difficult to distinguish the tumour from a solid enlargement of the liver, except by the negative signs, which arise from the absence of those other symptoms which ought to characterize a structural change of a decided character; the ascites and deep jaundice for instance which seldom arise from the hydatid tumour. It is clear, however, that as many of the symptoms in either case arise from the same cause, viz. the increased size of the organ, it will often be difficult to form a positive opinion, unless fluctuation is perceived. It has been said that there is a kind of trembling in the hydatid tumour, which differs from the sensation of mere fluid; but it is evident that the number and condition of the hydatids, and the thickness of the cyst, must materially alter the sensation communicated by the touch.

When this point is decided, and the existence of fluid is perceptible, there arises the further question, whether the fluid is formed by a chronic abscess or by hydatids. In the uninfamed state of the hydatid encysted tumour, the question can generally be

* See page 23.

answered, by the difference in the preceding history, and the absence of the usual signs of such inflammation of this organ, as could have produced an abscess, and by the non-occurrence (when the fluctuation becomes apparent) of rigors and perspiration and other symptoms of the formation of matter.

Sometimes when the fluctuation is indistinct, the hydatid tumour may be distinguished from enlargement of the liver by a degree of irregularity in the tumour perceptible through the abdominal parietes, giving to a certain extent the feeling of there being several tumours more or less separate from each other. Two cases were recently in St. George's Hospital at the same time, which were believed to be hydatids of the liver, in one of which it was thought that the circumstance alluded to, was perceived.—Dr. John Hunter* has given a description of a case of this kind, in which an hydatid encysted tumour, that had its basis in the liver, proceeded downwards in the abdomen, so that it was swelled before the man's death with many irregular protuberances. Some hydatid tumours from the same situation had also made their way through the diaphragm and were in contact with the lung.

Cases however will sometimes occur, which would probably baffle the most acute observer from their singular combinations.

* Transactions of the Society for promoting Med. and Chir. Knowledge, Vol. 2.

C A S E.

A boy received a blow by a fall upon the right side, followed by a tumour some weeks afterwards, by which he was ultimately carried off.—He was tapped two days before he died, and twelve pints of greenish water evacuated, but the upper part of the abdomen was not diminished by the loss. The liver was not much larger than natural, but contained many hydatids, not enclosed in a cyst, but set loose in the substance of the organ. The gall bladder was enormously distended so as to contain eight pounds of bile enclosed in several concentric bags formed by successive layers of lymph, and the duct was large and full of calculi. In addition to this immense tumour of bile, (which is similar to a case mentioned in the first part of the paper,) the spleen, which was healthy in structure, had attached to it an aqueous encysted tumour, containing six pounds of water not coagulable by heat*.

The coincidence of a large aqueous cyst, with an hydatid tumour observed in this case, is not uncommon†.

The origin of the hydatid, as well as of the aqueous encysted tumour, from a blow or injury, is another circumstance, which is very frequently found to have been the case in the human subject, whatever else

* Edinb. Essays and Observations, Vol. 2., p. 352.

† See Transactions of the Society for promoting Med. and Chir. Knowledge, Vol. 2.

may be the cause of its prevailing so extensively in certain seasons in sheep.

Another singular circumstance in the history of hydatid encysted tumours is the appearance of several such tumours in succession in different parts of the body. The most remarkable case of this kind which I have met with, is related by Mr. Hill of Dumfries*.

C A S E.

A little girl received a hurt on the side by a fall from a horse, which was succeeded by a tumour of the liver containing hydatids, the circumstances of which I shall afterwards have occasion to allude to. This tumour being quite well, there appeared thirteen years afterwards three large tumours on different parts of the abdomen, which seemed to be seated no deeper than the muscles, and were attended with a good deal of fever and pain. At last one of them, situated between the ribs and the spine of the ilium of the left side broke into the intestines, discharging a great number of hydatids with much blood and pus by stool. The others broke outwardly, and for three or four years afterwards, at different periods, tumours appeared on several parts of the abdomen, from all of which hydatids were discharged. Notwithstanding which, however, the patient ultimately recovered.

This fact led Mr. Hill, in a remarkable case of the

* Med. Comment., Vol. 2. p. 303.

kind, to enquire whether some people might not have an hydatid constitution, as others have a scrofulous one. Dr. Hunter endeavoured to explain the same fact in a different way, by supposing that hydatids might escape from tumours in the liver or spleen, in which organs they are so frequent, and drop down to some other part of the abdomen and pelvis, and increase them.

It would appear then, from what I have advanced, that an hydatid encysted tumour will, in general, produce more pain and irritation of the liver and lungs than an aqueous encysted tumour, so that a fluctuating tumour in the liver, wholly without pain, would be more likely to be of the latter than the former kind; the diagnosis however is of less consequence, than between either of these tumours and other diseases of the liver, which may however in most cases be distinguished by careful examination from the two species of encysted tumour.

Is an hydatid encysted tumour, in an *uninflamed state*, to be opened, so as to evacuate its contents, in order to prevent further consequences? This is an operation which has sometimes, but not often, been done, and occasionally with success; but it is probable that more severe inflammation would generally take place than from opening an aqueous encysted tumour, the tumour itself being more disposed to inflame, and a larger opening, with probably more

violence, being sometimes necessary than for the evacuation of simple water. I should therefore not be disposed to perform the operation, unless the tumour was of considerable size, and produced much inconvenience or irritation; but rather to wait till it became from these circumstances, or from suppuration, more decidedly necessary. I have not seen the operation, however, performed till after suppuration had been established, but if the symptoms, from pressure, should become urgent, there seems no reason why the operation should not succeed in the same way as when it is done in other parts of the body; allowing for the greater danger of a suppurating cavity connected with the liver.—I say a *suppurating* cavity, for if we may judge by the usual course of hydatid tumours in other parts of the body, we may reasonably expect that although the opening in the parietes may close, yet the cavity itself will not be so likely to become obliterated, as in the aqueous encysted tumour. For instance.

CASE.

The operation is described as having been performed by M. Recamier in an uninfamed hydatid tumour of the liver, by which, on two successive days, about a pint and a half of serosity, slightly turbid, escaped. The patient, however, still suffered pain: a month afterwards, a fresh puncture was made, and a fluid of the most foetid odour escaped with a quantity of hydatids; the cavity was subsequently

injected and contracted, and the patient was probably cured*.

Unless, therefore, the tumour was very large, or the health was much disturbed by it, or the local symptoms were severe, the danger would probably not be much increased by waiting till suppuration had been established, since suppuration, probably, would not be prevented by an earlier opening; still, however, the question would require consideration, for there is the same danger of rupture of the cyst, as with the aqueous encysted tumour.

CASE.

A young girl had a tumour evidently situated in the liver, but its nature was not clear. One day, in consequence of exertion, she suddenly felt an acute pain, the tumour disappeared, but the lower part of the abdomen became tumefied, and fluctuation was very perceptible. M. Roux made an incision, which gave vent to a transparent straw-coloured fluid, in which a great number of hydatids were floating. The patient died soon afterwards, and on opening the abdomen, many more were found in the cavity of the peritoneum, and in the liver was an enormous cyst which had been ruptured†.

* Med. Gazette, Vol. 2., p. 374.

† Med. Gazette, Vol. 1., p. 771.

Mr. Annesley mentions a case in his practice, in which a similar fatal event took place *.

In the Medical Gazette† is an account of a case in which, in consequence of a fit of passion, a *single* hydatid was disengaged from its bed below the pleura, and the same fatal result ensued.

Undoubtedly, however, when symptoms of suppuration have occurred, or there is such a degree of irritation and suffering as to render suppuration probable, or the patient's life is endangered by pressure only, an operation is called for.—The symptoms of suppuration in the hydatid tumour in the liver will generally present the same difference, from those of a simple abscess in this organ, which I pointed out when speaking of the inflammation and suppuration of the aqueous tumour, so that a careful attention to the previous history of the case, and the local appearances and state of the system at the time, will at least create a strong suspicion of the nature of the disease.

CASE.

A woman was admitted into St. George's Hospital under the care of Dr. Hewett, with a tumour apparently attached to the liver, and containing fluid. The patient, however, had such a modification of the usual symptoms of abscess, that Dr. Hewett

* On the Diseases of India.

† Vol. 1., p. 325.

believed the tumour contained hydatids. She was kept quiet a short time with the view of procuring adhesion of the suppurating tumour to the abdominal muscles, after which it was punctured with a trocar by the late Mr. Rose. There was discharged through the canula a wash-hand-bason full of broken down hydatids mixed with thick yellowish-green watery pus. The woman, however, experienced only temporary relief, and died shortly afterwards.

I have seen exactly the same kind of fluid in other cases in which suppuration has taken place in hydatid encysted tumours of the liver, and it bears so much resemblance to the fluid evacuated in the two cases of abscess related in the first part of this paper, as to add strength to the supposition of the peculiar matter in those instances having been also derived from a membranous cyst.

Sometimes, however, the tumour itself bursts externally and gives exit to its contents, and the patients now and then have got well. This took place by ulceration in the case I have quoted from Mr. Hill, and spontaneous openings seem to have formed in each of the other hydatid tumours which afterwards appear. Guattani* mentions an instance in which, instead of ulcerating, the skin, which was much attenuated, appears to have literally burst during one of the fits of coughing, and through a small

* De Aneurysm.

opening, like a crow-quill, above 300 hydatids were thrown out to a considerable distance. The opening remained fistulous, discharging a little serosity, and then healed six years afterwards.

Next to the formation of an external opening on the surface of the abdomen, the establishment of a communication between the cyst and the interior of the colon is the most favourable circumstance when suppuration occurs. I am indebted to Mr. Keate for the following case.

C A S E.

A gentleman had constant pain in the epigastrium and other symptoms of dyspepsia, the cause of which was not apparent for several years, at the expiration of which time his health was so much impaired, that he was exceedingly emaciated, and his life was despaired of. He suddenly felt, after an exertion, an inclination to evacuate the contents of the bowels, and began to discharge an immense quantity of watery fluid with what he termed portions of flesh, but which proved to be hydatids. One vessel after another was thus filled, till it was supposed that near two gallons must have been discharged. After this his health was restored, and he still remains well, —several years having now elapsed.

C A S E.

An equally fortunate result took place in a lady,

who was attended by Dr. Seymour, whose life seemed in imminent danger from an enlargement in the situation of the liver. Instead of a sudden rupture, however, hydatids were discharged by the bowels during a considerable time, during which the tumour gradually disappeared, the constitutional symptoms subsided, and she has remained free from complaint for several years.

I conclude that the tumour in these two cases ulcerated into the *colon*, from the hydatid being discharged *only* by stool ; but the cavity will sometimes communicate with the *duodenum*, in which case an additional symptom occurs, the hydatid being *vomited* as well as got rid of by the bowels, which circumstance is, probably, attended with greater danger than if the tumour merely ulcerates into the lower and less important part of the alimentary canal.

C A S E.

A case of this kind is related by Dr. Blackmore of Plymouth *, in which after several years suffering from symptoms of impaired energy of the stomach, with one attack of jaundice, a woman was seized with inflammatory symptoms with a return of jaundice, and after a month's illness there occurred violent vomiting of hydatids with purging of the same substance and much prostration of strength ; the vomit-

* Medical Gazette, Vol. 9., p. 466.

ing and purging returned several times at intervals of a few days, after which she continued to evacuate some more hydatids with less urgent symptoms, till her death occurred, a month after the cyst had burst. —A large cavity was found connected with the posterior part of the right lobe of the liver; it was lined with lymph, and contained about a pint of bilious ichor, mixed with coagula of blood, but emptied of the hydatids which it previously contained. This cavity had ulcerated into the duodenum by an opening half an inch in diameter, and the small intestines to some extent were vascular and thickened.

There appears also in this case to have been another effect of the irritation of the hydatid encysted tumour upon the structure of the liver, which sometimes, though not very frequently, takes place. In the right lobe of the liver, near the tumour, were some scattered scrofulous abscesses, none of which were larger than a pea; in a similar case, however, in which the hydatids were discharged by vomiting and purging and by the lungs, from a large sac of hydatids connected with the spleen, which had also been opened from the abdomen, a large foetid abscess occupied both lobes of the liver*.

In the case I have just quoted, the combination of an hydatid encysted tumour of the spleen, with a large abscess in the liver is remarkable, but I will not

* Edinb. Med. and Surg. Journal, Vol. 15., p. 51.

enter into speculations concerning their probable connection with each other. It will be right, however, to observe that when an abscess in the liver co-exists with an hydatid tumour, or has been produced by it, an instance of which I have seen, the danger of the case must be infinitely greater, and the diagnosis very much more difficult, since there will now be added to the usual symptoms of such a tumour, those of inflammation of the substance of the liver, and those indications of suppuration which are usually absent or scarcely apparent in the common suppuration of the hydatid cyst.

Instead of ulcerating into the intestinal canal, an hydatid encysted tumour of the liver sometimes makes its way through the diaphragm into the lungs, and the hydatids are discharged by coughing. In the *Medical Transactions**, is a case of this kind in which hydatids of various sizes, from that of a pea to that of a pullet's egg, were thus coughed up for several months, the hydatids having sometimes appeared to obstruct the air-vessels, so as to produce the most urgent symptoms of impending suffocation.—In the first part of this paper, I related a case in which an aqueous encysted tumour appeared to have communicated in the same way with the lungs, but it is remarkable that no case of this kind appears to have ulcerated into the intestines, which the hydatid tumour frequently does.

* Vol. II. 486.

It would seem desirable, when the tumour has thus ulcerated into the thorax, to procure an opening, if possible, through the abdomen, in order that a direct opening into the cyst might enable the hydatids to come away more freely; the danger of a large and circuitous exit in which two important organs at once participate, being thus got rid of, and the healing of the sinuses through the lungs facilitated. This result took place in the interesting case of Mr. Hills, which I have already alluded to, the disease having lasted eleven years in the liver, and hydatid tumours being formed in the abdomen thirteen years after that in the liver had been cured.

It is scarcely to be expected, however, if the original tumour is so situated as to make its way through the thorax in preference to an external opening, that an opportunity would often be afforded, however desirable it may be, to make an external, i. e. a depending opening, through the abdominal muscles, in order to heal the more dangerous one through the lungs; nor, indeed, is it to be expected, with so much mischief among so many important organs, that, if the surgeon could do so, the patient would have strength of constitution to subdue the disease, except in some rare cases.

CASE.

A woman was under the care of Dr. Billing at the London Hospital, who died under these circum-

stances; an external opening, discharging hydatids, having formed naturally in the abdomen, after she had for some time expectorated hydatids through the lungs. The liver extended almost into the pelvis, an encysted hydatid tumour of the size of the fist being situated at its under part, and being entire; while the gall-bladder formed another tumour stuffed with dead hydatids, and it was from this cavity of the gall-bladder that an opening of the size of the finger • led upwards through the diaphragm into the bronchial tubes, in addition to another opening from the same tumour through the abdominal parietes. This circumstance of the formation of an hydatid tumour within the gall-bladder, or within its cavity, instead of in a cyst formed expressly for their reception, I have not heard of in any other case; it is possible, however, that there is some error in the account, and that the hydatids had really made their way out of a cyst in the liver by ulceration into the gall-bladder, as in the case already related, of Dr. Young's. In Dr. Billing's case, however, there was no obstruction to the course of the bile into the duodenum, as there was in the other instance*.

It will be seen from the preceding statement, that, while there is, in some respects, a great similarity in the course of the two kinds of encysted tumours of the liver, they yet differ from each other materially, not only in their origin, but in many

* Med. Gaz., Vol. VII. 542.

points during their whole course, the hydatid encysted tumour being, however, on the whole, more dangerous than the aqueous, though both of them are frequently fatal.

I am not acquainted with any fact which establishes the occurrence of unhealthy and fungous ulceration after an hydatid encysted tumour of the liver, similar to the cases which I related, in which I believed that this process had taken place in the aqueous encysted tumour. It is very possible, however, that they may resemble one another in this respect also, since there is no doubt that unhealthy ulcers, which are sometimes called malignant, are now and then formed, after hydatid tumours in other parts of the body have been opened, especially if there is a small opening into the cyst, which contains the hydatid, or if the cyst has been irritated by passing a seton through it; the appearance, in fact, resembling a similar change, which is sometimes seen in bursal encysted tumours.

I shall not occupy the time of the Society in describing what I suppose may be the proper medical treatment of the curious encysted tumours, the course of which I have endeavoured to describe; for I conclude the cure of them must be conducted on those general principles only, which guide us in other diseases, and that in each case, as particular symptoms arise, those must be combated. I will venture

to observe, however, that I think too much care has been directed in many of these cases, to what has been imagined to be inflammation of the liver, when, in reality, it did not exist to the extent supposed. The symptoms throughout the whole course of the complaints, are rather those of pressure and irritation, than of actual inflammation, and the acute pain, which arises from this pressure, is not to be considered as entirely inflammatory; in fact, in many cases the slowness of the pulse sufficiently points out this circumstance; but even when there *is* a quick pulse and hot skin, there is debility, hectic and irritative fever, and not a sthenic diathesis, the tongue remains moist and clean with great rapidity of the circulation, or is covered with brown sordes; and consequently, general depletion and extended mercurial courses, on the supposition of inflammation being present, will only hasten the patient's death.

The progress of the disease may be materially checked however. A case lately occurred in St. George's Hospital, in which the tumour was much lessened, and ascites and other symptoms got rid of for a time by the use of iodine. The disease was ultimately fatal nearly a year after.

It is obvious, however, that as with regard to encysted tumours of the same kind elsewhere, medical treatment can only be directed to the palliation of the symptoms successively produced by the growth of the tumour, or by its own efforts to effect a cure;

and that as the extirpation of the tumour is out of the question, the only effectual cure consists of the surgical means by which the obliteration of the cyst can be effected, i. e. by causing adhesion of the parietes of the cyst by lymph, with or without suppuration, and sometimes also by granulation, or by the destruction of the cyst, all of which methods are employed for the cure or removal of encysted tumours of the same kind in other parts of the body.

Perhaps, therefore, I may be allowed to make a few remarks upon the important question of the mode in which the contents of the cyst should be evacuated, which is a necessary preliminary step, and upon what should be done subsequently ; the cases in which the operation is called for having already been alluded to.

1. With regard to the treatment of the aqueous encysted tumour, I think it quite clear from the successful cases, which I formerly related, that the best method of proceeding when they contain water, or water with a little serum, or lymph, i. e. when they are nearly uninflamed, and the cysts are thin and membranous, is to puncture them with a trocar, taking care that no undue pressure is employed, which might induce too much inflammation, and that moderate pressure is continued during the whole time the fluid continues to flow, as well as when the canula is withdrawn, so that no air can enter the sac. If, therefore, the contraction of the abdominal muscles

and diaphragm does not seem to empty the cyst readily, the use of a cupping-glass over the canula, is a better method of proceeding than using undue force with the hands.—The great object, after the evacuation, is to heal the puncture, which readily takes place, and to keep the sides of the cyst in contact by pressure, which may be done by means of long straps of adhesive plaister round the abdomen, and a moderately tight bandage.

2. If *suppuration* has taken place, I should be inclined to adopt the same means, which I employed in the first case, related in the beginning of the paper. That is to say, to puncture the abscess in the same manner with the trocar, through which a gum catheter may be introduced to give exit to the fluid, that may be subsequently evacuated ; after the puncture, pressure may be employed by the side of the catheter, to produce as much diminution of the size of the cyst, as the degree of the inflammation present in the case will allow.

An objection is made by some persons to the employment of a cutting instrument in abscesses of the liver, lest there should not have been such a degree of adhesion between the covering of the abscess and the abdominal parietes, as to prevent the passage of some of the contents of the abscess into the peritoneal cavity ; and hence, if there is not obvious adhesion, they employ caustic potash to open the cavity, in-

stead of a surgical instrument. It is clear that if such a method is right in cases of common abscess, it must be doubly so in the abscess in a cyst, as there is usually much less adhesion than attends suppuration in cellular membrane.—I cannot, however, see the propriety or advantage of adopting this proceeding in opening any tumour containing fluid in the liver or other part of the abdomen. The only case which occurs to my recollection, as having been, perhaps, attended with peritonitis subsequent to the opening of an abscess, is one related by Dr. Graves*.

In this case excruciating pains came on, three hours after a few ounces of pus escaped from an abscess in the liver, and the patient died twenty-seven days afterwards. In this instance, however, caustic *was* applied, and a small cut was made after the separation of the slough, in the deeper parts, which had not been destroyed; and there is further, I think, no proof whatever that the peritonitis was occasioned by the escape of pus into the peritoneum, nor, indeed, of there having been peritonitis at all at that time, for neither pus nor any other kind of fluid was found in the cavity, and the abscess still held upwards of four pints of purulent fluid. The inflammation sometimes consequent upon opening an abscess of this magnitude, is quite sufficient to account for the symptoms resembling peritonitis, with-

* Dublin Hospital Reports, Vol. VI.

out supposing that it arose from escape of pus into the cavity of the peritoneum; and in another case related by the same gentleman, even the opening the gall-bladder by mistake, produced no inflammation, and therefore, I conclude, no effusion into the peritoneum.

I have related several cases in which a simple puncture of an uninflamed, and therefore, probably an unadherent *aqueous* tumour, did perfectly well, and in which a puncture with a lancet answered the purpose; at all events, the use of the trocar which I employed in the first instance in my own case of abscess, is not, I presume, more likely to be attended with effusion into the peritoneum, than the puncture of the bladder is likely to be followed by escape of the urine into the cellular texture, since there is in the latter case the contraction of the bladder to add to the probability of effusion. The catheter may also be withdrawn with impunity after a day or two, when the parts are consolidated by adhesion, as it may be when the bladder is punctured above the pubes.

Another method is recommended in a paper of Dr. Graves's, in order to obviate this, I think, imaginary danger, viz. the making an incision through *part* of the abdominal parietes, leaving the remainder to be opened by ulceration. If fluctuation is evident, however, I cannot conceive there is any necessity for this dilatory proceeding, but in doubtful cases, an instance is related, which seems to shew

that it may serve the purpose of directing, in some measure, the course of the ulceration.

3. I conceive the same plan is best, if it is determined, to open an *hydatid* encysted tumour, whether in a simple or in an inflamed state, unless the previous confinement of the contents of the cyst had so much disturbed the health, or the contents were so decidedly purulent, as to make a larger opening at once necessary. It might be thought, perhaps, that with these bodies, the orifice made by the trocar would not be sufficient to give exit to them, but their figure becomes so altered, or they are so readily broken down and burst, that they will pass through a very small opening. I have mentioned a case, in which, when spontaneously ruptured, and nearly uninflamed, more than 300 hydatids were propelled with considerable force, through an opening which is described as having been not larger than a crow-quill; and when in the state of abscess, in Dr. Hewett's case, a whole wash-hand-bason of broken down hydatids and pus came away through the canula very readily. Cases in which a complete incision with the knife has been made at once, do not seem, on the whole, to have been so successful, as when a smaller opening has been employed, which can be enlarged subsequently, if it is found insufficient, with less risk of opening the peritoneal cavity, than if the same sized opening be made at once.

If a large opening be made at once and kept open,

there is necessarily a suppurating cavity, which, in so important an organ as the liver, is, of course, not a little dangerous, while, if there is no inflammation, there is sometimes a chance, though a small one, of procuring adhesion after the puncture, in the same way as it generally occurs, if an aqueous encysted tumour is punctured. If, therefore, the character of the fluid mixed with the hydatids is not purulent, little risk is run, I imagine, by attempting to procure this obliteration by adhesion; and if this fails, the puncture can readily be reopened.

4. If the fluid, however, be at all purulent, the propriety of attempting wholly to close the orifice is much more doubtful, and it will probably be less hazardous to leave it open, lest dangerous symptoms should be produced by confinement of matter become foul by the opening. Even now, however, when in part purulent, I am inclined to think the orifice should be at first small, as I have before recommended, for the following reason.

It must be recollected that the cyst of hydatid, like that of aqueous encysted tumours partakes more or less of the nature of a serous membrane; it is, like the natural serous membrane, indisposed to secrete pus, when inflamed, and if any purulent secretion is found, it is mixed with lymph and with much of the aqueous and mucilaginous fluids that are secreted in the uninflamed condition. The pus is still formed by the vessels of the cyst, not by gra-

nulations as in the cyst of an abscess ; the cavity, therefore, does not fill up by granulation at all readily, but the sides still remain more or less disposed to adhere by lymph if they are kept in contact by such pressure as can safely be employed. Provided, therefore, the centre be open, and the symptoms carefully watched, it is, I conceive, right to diminish the size of the cavity as much as possible by adhesion, and not at once, to encourage suppuration throughout the whole cyst by allowing a free access of air by means of a large opening.

To shew to what extent adhesion may be procured in an hydatid encysted tumour, I may refer to a case which occurred in the practice of the father of a former pupil of mine, Mr. Attenburrow, of Nottingham, whose character as a skilful surgeon was not belied by his diagnosis of the case.—A girl about fourteen, fell down stairs, and a month afterwards a swelling formed in the thigh, which increased without pain or disturbance of the health, till in ten months' time the length of the tumour from the pubes downwards was twelve inches, its breadth nineteen, and its circumference at the base thirty-three inches. A large trocar was passed into the tumour, and a quantity of dark coloured matter evacuated, the stream being occasionally interrupted by large portions of broken down hydatids. Strong pressure was applied, and several times the bursting of an hydatid was felt, which was invariably succeeded by a stream of clear serum, which was again followed by

hydatid cysts and purulent fluid. Seven pints were thus evacuated, after which pressure was applied. About three weeks afterwards a pint and a half of purulent fluid was let out, which was attended with some fever. Pressure was again applied, and there seemed to be no further return of the swelling*.

Had so large a cavity been freely opened, instead of attempting to procure adhesion, under such apparently unlikely circumstances, the result of the case would probably have been very different.

5. There is only one other circumstance which I will allude to, with regard to the treatment of these cases, which is, that when an hydatid encysted tumour has been opened spontaneously, or by art, much good appears in many cases to have been derived, when the discharge has put on an unhealthy character, from washing out the cavity with warm water, or by injecting into it some gently stimulating applications, some short time after the first opening had been made. This practice seems to induce a more healthy secretion in the cyst, and to facilitate the adhesion of the sides by lymph, and is not followed by inflammation to a hurtful extent, if proper care be taken.

* Med. Gazette, Vol. VI.

CASE
OF
AQUEOUS ENCYSTED TUMOUR
OF THE
KIDNEY,

WITH A SUPERNUMERARY GLAND ATTACHED TO IT.

BY CÆSAR HAWKINS, ESQ.

SURGEON TO ST. GEORGE'S HOSPITAL, AND LECTURER ON SURGERY.

READ MAY 28TH, 1833.

IN a paper which I presented to the notice of the Society, in the early part of this season, I gave an account of some cases of tumours connected with the liver, which I called *aqueous encysted tumours* of that organ; and among other peculiarities of this disease, I mentioned the nature of the fluid which they contain, which is water only without any albumen or other animal matter, except a little of what Dr. Marcet has called *muco-extractive matter*. In speaking of the impropriety of the term *serous cyst*, as applied to these tumours, I observed that I had punctured a tumour apparently connected with the kidney, which I believed to be an instance of an

aqueous encysted tumour of that organ, because the fluid which was evacuated was of the same kind as that which these tumours usually contain. An opportunity has since been afforded of verifying this observation by the death of the patient; and as the growth of the aqueous encysted tumour of the kidney to such a size as to constitute a disease, perceptible during life, is, as far as I know, still more rare than the same disease in the liver, the relation of this case may, perhaps, not be uninteresting to the Society, as a sequel to my former paper, the contents of which appeared to be new to many of the members.

John Connell, æt. 6, was admitted October 18th, 1832, into St. George's Hospital under the care of Dr. Seymour, with enlargement of the abdomen, and shortly afterwards his mother having given an obscure account of his having received some injury, I was desired to see him.

It appeared from the mother's account, and from a letter written by the medical man who had first seen him after the injury, that three weeks before his admission he had been struck down, and perhaps run over by a carriage, which produced great pain in the abdomen, with considerable swelling, in consequence, as this gentleman supposed, of inflammation of the colon;—that the swelling had almost all subsided four or five days afterwards, when the bowels had, with great difficulty, been acted upon, and that ten

days after the injury a swelling again slowly appeared without much pain, but which was now confined to the right side of the abdomen instead of having been general; and that having been previously a stout healthy child, he had since that time become emaciated, and had suffered from feverishness, with occasional pain in the tumour.

The whole abdomen seemed large and distended, but especially the right side, which was tense and firm, and occupied by a tumour which extended from the right hypochondrium to the right iliac region, and from the back of the loins to a little beyond the linea alba, the ribs and ensiform cartilage being considerably pushed upwards by the bulk of the swelling. The intestines were pushed across to the left side, or covered by the tumour, for no sound of air could be detected below the swelling, though it seemed as if deep pressure enabled the edge of the liver to be felt by the finger. The tumour evidently contained fluid, fluctuation being clearly felt by the fungus being placed laterally, but more obscurely, from above downwards, and it seemed as if the fluid was divided into two portions by a line running obliquely across the abdomen, just below the umbilicus.

The tumour did not seem to be very painful, but the child complained of pain occasionally, and pressure gave some pain at the lower part of the abdomen.

The child did not suffer from much fever, but the

pulse was rather quick and feeble, and the tongue white. The bowels were constipated, requiring the frequent use of castor oil, and the evacuations were light coloured. The urine was passed freely, but was rather scanty in quantity, and was healthy in quality.

What then was the nature of this tumour? Was it an abscess in the iliac fossa and among the abdominal muscles, produced by the blow? This did not appear probable to me from the absence of perspiration and of rigors, the slight pain and tenderness, and the symptoms of *irritation*, rather than of *fever*, which were present in the case.

Was it a deposition of serum and lymph, or of pus in the peritoneum, in consequence of the inflammation supposed by his first medical attendant to have taken place in the colon? This is not indeed a very common circumstance, but yet on the whole, after hearing the opinions of our colleagues and of many other gentlemen who saw the case, it seemed to Dr. Seymour and myself to be the most probable cause of the swelling. What seemed to make this opinion likely was the abrupt line, which was felt where the tumour and the intestines on the left side joined, and the crackling sensation which was there felt, as if by the deposit of lymph at the margin of the cavity.

The child was directed to take castor oil every other morning, to take one grain of calomel three

times in the day, and to have ten leeches applied to the swelling, with fomentations.

Nov. 7th, about three weeks after his admission, the irritation of the system had much subsided, and all pain and tenderness had ceased, and the boundary line of the cavity seemed to be nearer to the right side, as if the fluid had diminished, and it seemed now to be in one cavity, the apparent division being no longer perceptible. A better diet was allowed, but the calomel was continued, with the castor oil.

13th.—Some pain being felt, eight leeches were repeated, and the calomel, with four grains of Dover's powder, was given twice a day, instead of three times.

22d.—Leeches repeated in consequence of pain, and beef tea given instead of meat.

By this time the swelling had much diminished, so that the boundary was felt about half an inch to the right of the umbilicus, instead of going beyond it, and the tension was lessened. The health had by this time much improved, the bowels were more regular, the appetite good, and the child was cheerful and free from pain or anxiety.

24th.—The calomel was omitted, and the abdomen was ordered to be rubbed with an ointment

composed of equal parts of mercurial and iodine ointments.

Very soon after this a marked change for the worse took place, fever returned Nov. 28th, with sickness, for which effervescing saline mixture was directed.

December 1. Great pain and tenderness of the whole abdomen came on, as if there was general peritonitis, and the fluid in the tumour rapidly increased again, and it became very tense and painful. The child lay with his legs drawn up, and was unable to bear them to be laid down, and the countenance assumed an expression of great suffering, with slight inflammatory fever.

Twelve leeches were applied in the morning, and again in the evening, and in the middle of the day I made a small puncture into the tumour on the right side through the abdominal muscles, and let out 18 oz. of clear fluid nearly transparent, which evaporated almost entirely, leaving a small residuum of muco-extractive matter, without any trace of albumen. The evacuation of this fluid afforded very great relief, but our views of the nature of the disease were materially changed.

It seemed evident upon consideration of the nature of the fluid, that it had not been formed by the peritoneum, but was contained *in a cyst*, for the reasons

mentioned in my former paper, when I alluded to this case.

Was it then an *aqueous encysted tumour* of the liver, such as I was then speaking of?—Or was it an aqueous encysted tumour of the kidney?—Or was the fluid contained in a cyst connected with fungus hæmatodes of the kidney?

This latter opinion became in a short time the general one, for it seemed as if after the evacuation of the fluid, a solid tumour could be felt in the loins, which indeed was subsequently found to be the right kidney though not enlarged, as it appeared to be from its having become more moveable, and the countenance soon put on that sallow and emaciated appearance, which so often attends malignant disease; and besides, fungus hæmatodes of the kidney is more common than the aqueous encysted tumour of the kidney or liver, enlarged to such a size as to produce the symptoms observed in this case.—The urine was indeed healthy for the most part in its quality, but so it often is in fungus hæmatodes of the kidney, till the tumour softens, and discharges blood, or pus, or the nature of the secreted fluid is otherwise altered. We had observed, however, an unusual scarcity of urine at the first inspection of the case, which was not noticed during the temporary amendment of the patient, but was now again remarked; and several times before the child's death I observed that the urine contained a considerable quantity of sulphuretted

hydrogen, which tarnished silver, and was evident to the smell, though the urine was clear, and sufficiently acid, to be considered in other respects healthy.

Adopting this view of the case, as the most probable, the fluid was not again evacuated, which I now much regret, as it might have afforded some relief to the boy, though it is not likely to have saved his life.

The amendment, however, occasioned by the evacuation was so temporary, that it did not seem to be again called for, especially after the supposed existence of solid tumour. The pain soon returned, the child rapidly fell away, in a week the swelling was as large as before the operation, extreme restlessness took place, with starting and screaming in his sleep; convulsions were once observed, and the child could not bear to be touched or looked at. The tumour went on increasing to a great degree, and the child lingered in a state of great suffering till Dec. 25th, when he died.

On examination after death the tumour was found to consist of a single cyst, containing about five pints of fluid, the greater part of which was clear and transparent, like that which had been previously evacuated, and, like it, did not coagulate at all on the application of heat; the remainder contained a good deal of the white semi-purulent matter which is usually seen in serous membranes, or in cysts, which have been inflamed. The cyst was tolerably firm in

front, but towards the back and inner part it was so thin and soft, as to tear with facility, and scarcely to allow of being dissected out. The cyst had protruded slightly below Poupart's ligament through the femoral ring, and reached upwards to the liver, raising the ribs, and pushing the liver towards the left side and into the chest; the other viscera were pushed to the left side of the abdomen, and the cyst was on that side covered by the peritoneum belonging to the colon;—in front it was adherent to the inner surface of the abdominal muscles, and behind to the iliacus internus and psoas muscles, and to the side of the lumbar vertebræ, where it was thinnest. It thus occupied the whole of the right half of the abdomen and iliac fossa, and encroached a little upon the pelvis, being external to the peritoneum.

On the inside and towards the fore part of the cyst was seen the ureter, which was traced upwards between the layers of which the cyst was contained, towards the right kidney, which was situated at the back part of the cyst towards its upper and inner part. The ureter was tortuous and elongated, so as to make it difficult to trace its course, but it entered the kidney in the usual way, and was of its common size, and had no communication with the cyst; but there were two small orifices in the pelvis of the kidney, which seemed to have been the result of ulceration, and near these orifices the ureter and pelvis of the kidney were of a black colour, and tarnished the probe, as sulphuretted hydrogen does. The kidney was of the

usual size, and healthy, and its anterior surface formed as it were a part of the cyst, as the cyst was intimately connected with the margins of the organ, and could not be traced over its surface; and the surface of the kidney, which was thus seen in the interior of the cyst, was flattened, and rough, and the covering thicker than usual. About five inches from the kidney towards the inner part of the cyst, was a small body, about the size of a walnut, which projected into the cyst, and was soft and lacerable, and covered by a very thin coat; this body proved on examination to be a *third kidney*, consisting of a single lobe, with the cortical and tubular part perfect, and having a single mammillary process, and calyx, but no excretory duct could be traced.

All the other viscera were healthy.

Such then was the appearance of this curious cyst, and the question presents itself, what was its first formation?

1st. It was conjectured that it might be a cyst formed by laceration of the kidney in consequence of the blow, the smaller body being the lacerated portion separated from the rest of the organ by the growth of a cavity containing urine.

The small kidney was, however, too perfect, and the original one too smooth and uniform in its shape and size, and in its external and internal structure to allow

of this supposition. The small body was in fact a third kidney, such as is sometimes found, and perhaps secreted urine, which was carried off by a duct which escaped our observation, or was destroyed by the growth of the cyst. It exactly corresponded with the general form of these supernumerary kidneys.—Geoffroy de St. Hilaire says, “*Les reins surnuméraires n’ etaient évidemment que des lobules des reins normaux, restes distinct de la masses de ces organes. En un mot il y avait scission, et non multiplication des reins.*”

2ndly. The nature of the fluid served also to shew that the cyst could not have been formed by laceration of the right kidney by accident, nor yet by the gradual accumulation of urine secreted by the separate lobule in consequence of its having no excretory duct. The fluid was not urinous at all, either when drawn off during life or collected in still larger quantity before death, and (with the addition of the result of inflammatory action) its nature was the same after death, as when I let it out during life. It had indeed after death a strong animal smell, which induced some gentlemen to suppose that it at least contained some urine, but the urine in the bladder was very different in its nature, and was healthy and clear, and free from any admixture with the purulent secretion of the cyst; the fluid in the cyst was also alkaline, and ammonial; the urine was acid.

To be certain with regard to the nature of the

fluid, I requested Dr. Prout to examine some of it, comparing it with the urine of the bladder, and he was kind enough to send me the following result of his analysis.

DEAR SIR,

The fluid from the cyst is *serous*, and after a careful examination, I have not succeeded in detecting anything urinary in it ; at least, if it contains urine, the quantity, I am satisfied, must be very minute.

Yours truly,

W. PROUT.

Sackville Street, 30 Dec.

This analysis will serve to show not only that the contents of the cyst were not urinary in their origin, but also that the small communication before alluded to between the pelvis of the kidney and the cyst, had not allowed any urine to pass into the cyst, but that the orifice was more probably the result of ulceration induced by the pressure of the cyst, in order to allow of the escape of some of the fluid into the nearest tube.

3dly. I am induced, therefore, on the whole, to have little doubt that the cyst was an *aqueous encysted tumour* of the kidney, similar to those which I have described as enlarging so greatly in the liver. It is curious, indeed, that while I was enabled to mention to the Society a great number of cases of this kind in the liver, besides those which I had myself seen, I have

not met with one satisfactory case on record of the same disease in the kidney, although almost every one must have seen these cysts in this organ, when of small size, and unsuspected during life, from their having caused no symptoms of disease. Even Morgagni has only, I believe, an account of one such cyst, and that contained a few ounces of fluid only, and had not been detected during the life of the patient.—There are, indeed, many accounts of what are called curious cases of cysts connected with the kidney, but some of these were instances of mere distension of the coats of the kidney, and of the excretory vessels, with which every one is familiar, and some of them are actually ovarian tumours, erroneously supposed to have originated in the kidney*.

But although I am acquainted with no history like the one I have related, these cysts must not unfrequently enlarge to a considerable size. In the collection, for instance, of the College of Surgeons, are several tumours of the kind connected with the kidney, which have precisely the same appearance, as in that which I have detailed to the Society. They are connected in the same way with the convex part of the organ, which is flattened, and its coats condensed in a similar manner. They are, for the most part small, from the size of a pea or nut, to

* See *Miscell. Acad. Nat. Curios.* Dec. 1. Ann. 1. 1670. p. 133. *Novi Comment. Gotting.* T. 8. p. 10. *Bulletins de l'Ecole de Medicine* Ann. 1811. p. 185, &c. &c.

a size sufficient to hold several ounces, and one appears to have been large enough to have held two pints, and it seems to have been originally formed of two cysts, by an imperfect division being still seen in the interior of the cyst. Unfortunately, however, no account of the case has been preserved.

These *aqueous encysted tumours* of the kidney are called in the Catalogue of the Museum of the College by the same name which was given by Mr. Hunter to the similar cyst in the liver, viz. *spurious hydatids*. I need not repeat my objection to the term, as I dare say many of my hearers are acquainted with the more common characters of *hydatid tumours* of the kidney, these animals being not unfrequently discharged with the urine in vast numbers, and for a great length of time, and the disease being sometimes entirely cured, so that although I have seen the disease occasionally during the life-time of the patient, I do not recollect having been present at one dissection of the disease.

It will be observed also from the preceding history how exactly the *aqueous encysted tumour* of the kidney corresponds with the same tumour in the liver;—it has the same origin from a blow;—there is a similar rapid growth in the cyst;—the fluid has precisely the same appearance, and chemical character;—and finally there is the same acute suffering from distension and pressure, before the patient's

death, and the same termination in inflammation, and inflammatory secretions, which were before pointed out to the notice of the Society in the Aqueous Encysted Tumours of the Liver.

